REMARKS

1. Applicant thanks the Examiner for the Examiner's comments which have greatly assisted Applicant in responding.

2. 35 U.S.C. §112. The Examiner has rejected Claims 3, 8, 27, and 32 under 35 U.S.C. §112, second paragraph.

Claims 3 and 27:

The Office Action states:

> "As per claims 3 and 27, the term "said AC power transfer collection" in those claims lacks antecedent basis."

Applicant respectfully disagrees. Both Claims 3 and 27 have proper antecedent basis for the term "said AC power transfer collection." Claims 3 and 27 appear as follows (emphasis added):

> 3. The method of Claim 2, further comprising:
>
> contracting **an AC power transfer collection** of at least two AC power transfers on an AC power network further comprises;
>
> contracting a sum of said associated AC power transfer for each of said AC power transfers of **said AC power transfer collection** on each of said flow gates of said flow gate collection.

> 27. The program operating system of Claim 26, further comprising:
>
> a program code segment supporting contracting **an AC power transfer collection** of at least two AC power transfers on an AC power network further comprises
>
> a program code segment supporting contracting a sum of said associated AC power transfers for each of said AC power transfers of **said AC power transfer collection** on each of said flow gates of said flow gate collection.

As can be seen from the bolded areas of Claims 3 and 27, proper antecedent basis exists for the term "said AC power transfer collection." Therefore, Applicant respectfully requests that the Examiner withdraw the rejection under 35 U.S.C. §112, second paragraph.

Claims 8 and 32:

The Office Action states:

> "As per claims 8, it is confusing because it cites the limitations of claim 7 while referring to claim 1.
> As per claims 32, it is confusing because it cites the limitations of claim 31 while referring to claim 25."

Applicant notes that Claims 7, 31 and 8, 32 describe two situations that occur in the invention as detailed on page 29, lines 10-13:

> "Note that in certain embodiments, each flow gate of a flow gate collection of an A C power network may be a significant flow gate. In certain embodiments, each significant flow gate of an AC power network is a member of the flow gate collection."

Therefore there is no confusion between said Claims. They are each distinct in their own respect. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection under 35 U.S.C. §112, second paragraph.

2. 35 U.S.C. §102(e). The Examiner has rejected Claims 1-17, 22-24, 25-41, 45-51, and 52-61 under 35 U.S.C. §102(e) as being anticipated by Tuck et al. (U.S. Pat. No. 6,115,698).

Applicant respectfully disagrees.

Claims 1, 25, and 52 appear as follows:

> 1. A method for contracting AC power transfer on an AC power network with a flow gate collection containing at least one flow gate comprising:
> contracting an AC power transfer on said AC power network comprising;

contracting an associated AC power transfer on each of said flow gates of said flow gate collection.

25. A program operating system executing on a computing system comprised of at least one computer, each of said computers in said computing system coupled to an associated computer readable memory, supporting with program code segments contracting AC power transfer on an AC power network with a flow gate collection containing at least one flow gate, comprising:

a program code segment supporting contracting an AC power transfer on said AC power network comprising;

a program code segment supporting contracting an associated AC power transfer on each of said flow gates of said flow gate collection.

52. A computing system supporting program operating system of program code segments with program code segments contracting an AC power transfer on an AC power network with a flow gate collection containing at least one flow gate, comprised of:

at least one computer, each of said computers in said computing system coupled to an associated computer readable memory;

wherein each of said program code segments resides in said computer readable memory coupled to at least one of said computers in said computing system;

wherein said program operating system contains a program code segment supporting contracting an AC power transfer on said AC power network further comprising;

a program code segment supporting contracting an associated AC power transfer on each of said flow gates of said flow gate collection.

In particular, Tuck does not teach, disclose, or contemplate an AC power network with a flow gate collection containing at least one flow gate as claimed in the invention. Tuck does not contemplate the concept of flow gates as claimed in the invention. Tuck teaches away from flow gates by teaching that Tuck's CPEX operates using a least cost path method. Tuck's least cost path method is not a physically logical method and is entirely different from the invention's flow gate approach.

A flow gate is described in the Specification on page 3, line 27-page 4, line 6:

"Consider an AC power network. There can be unlimited number of sources and loads in that network. Eventually though, the network runs out of capacity. There are certain lines or collections of lines of the network that are going to run out ahead of others and those constrained flow elements are a big problem for the electricity industry. These lines may typically be limited either by line carrying capacity or by transformer capacity limits associated with those lines. Note that there may be more than one transformer involved and that different transformers may have differing transformer capacity limits. These constrained flow elements are called flow gates."

Tuck states in col. 9, lines 50-51:

"CPEX determines the least cost, feasible contract path for scheduling each transaction."

Tuck clearly describes his least cost path method in col. 18, lines 44-49 and Figs. 62 and 63:

"CPEX calculates the path of least cost from any point A to any other point B using pricing and available capacity information from the database. As transactions are consummated and available transmission capacity is consumed on the least cost path, CPEX presents offers to Participants over alternative paths, in next-best cost order. FIG. 62 provides an example involving seven participants. Participant A floats an offer to sell 50 MWh at $18/MWh. Assuming all paths have at least 50 MW of available transmission capacity, CPEX then calculates the least cost path from A to G. In this example, the least cost path is through C, who adds $2.20 for wheeling, and E, who adds $1.50 for wheeling. The 50 MWh is shown on Participant G's terminal as 50 MWh at $21.70, and scheduled to enter G's system across the interface with Participant E if consummated.

FIG. 63 uses the same pricing as before, with the exception that there is less than 50 MWh of available transmission capacity between C and E. Since this path is not valid for the 50 Mwh sell offer from A to G, CPEX locates the next valid, least cost path. In this example, the sell offer would be presented to Participant G as 50 Mwh at $21.74, and scheduled to be received across G's interface with if consummated. This feature helps ensure the integrity of the electrical grid."

Applicant has described the differences between Tuck's approach and the invention's flow gates on page 7, line 7-page 8, line 12:

> "Today, transmission rights are further considered and negotiated in terms of point-to-point transfers within the network using a system known as contract paths. This contract path system of scheduling power transmission reserves transmission rights along a particular, direct path through the AC power network. This is done by purchasing transmission rights from each of the transmission line owners for each of the lines making up the direct path.
>
> Such thinking is contrary to the previously discussed physics of these AC power networks, because changes in power generation or load at any node have an essentially linear effect on all transmission lines in the network, and consequently impact all flow gates within that network to some extent. It often occurs that some constraint, occurring across a significant flow gate off that direct path, actually limits the transmission capability on the direct path.
>
> The contract path system maintains the fiction that AC power can be directed to follow a path through the network chosen as one might with natural gas. By changing the valves, one can mythically direct AC power a particular way through the AC power network. The contract path system was put in place because it was thought conceptually easier since one only had to make reservations along the single path. The fundamental problem with the contract path approach is that the contract path arrangement for transmission does not accord with the way the power actually flows in an AC power network.
>
> Today's contract path system is based upon a first-come, first-served priority scheme. What is bought has very limited resale capability. By way of example, consider three nodes A, B and C of an AC power network. Suppose one bought power transmission from A to B and bought transmission from B to C. Using the contract path approach, this does not necessarily mean one owns power transmission from A to C, because contract paths are not additive. Owning power transmission from A to B and from B to C would not necessarily entitle power transmission from A to C. To transport from A to C, one might have to purchase specific transmission rights from A to C. This is because of regulatory rules often

reflecting some flow gate constraint which would not be met in the two separate paths which would be triggered in the combined path. So in the contract path based market, which is the traditional market, once you have purchased the transmission from A to B, it's only value is often for moving energy from A to B. This is a common experience when all three nodes are in the same control area."

It is evident from Tuck that Tuck teaches a methodology that does not correspond to the natural law of physics and therefore teaches away from the claimed invention. Tuck points out the inaccuracies of his approach by describing his "transaction curtailment" approach in col. 2, lines 42-48, col. 14, line 10-col. 18, line 23. The invention's flow gate approach models the actual flows of electricity.

Tuck therefore does not teach every aspect of the invention either explicitly or impliedly.

Claims 1, 25, and 52 are allowable. Claims 2-17, 22-24, and 26-41, 45-51 and 53-61 are dependent upon Claims 1, 25, and 52, respectively. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection under 35 U.S.C. §102(e).

3. 35 U.S.C. §103(a). The Examiner has rejected Claims 18-21 and 42-44 under 35 U.S.C. §103(a) as being unpatentable over Tuck et al. (U.S. Pat. No. 6,115,698) in view of Luke et al. (U.S. Pat. No. 6,131,087).

The rejection of Claims 18-21 and 42-44 under 35 U.S.C. §103(a) is deemed moot in view of Applicant's comments concerning Claims 1, 25, and 52 above. Claims 18-21 and 42-44 are dependent upon Claims 1 and 25, respectively, which are in allowable condition. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection under 35 U.S.C. §103(a).

CONCLUSION

Based on the foregoing, Applicant considers the present invention to be distinguished from the art of record. Accordingly, Applicant earnestly solicits the Examiner's withdrawal of the rejections raised in the above referenced Office Action, such that a Notice of Allowance is forwarded to Applicant, and the present application is therefore allowed to issue as a United States patent.

Respectfully Submitted,

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